

Appl. No. 09/888,463
Amdt. dated October 14, 2003
Reply to Office Action of July 30, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of manufacturing a charge-coupled image sensor, wherein channel-shaped strip-shaped semiconductor regions running in a first direction are formed in a silicon slice so as to adjoin a surface thereof by implantation of ions of dopants and subsequent thermal treatments, wherein the surface of the silicon slice is provided with a gate dielectric comprising a layer of silicon oxide and a silicon nitride layer deposited thereon, and wherein a system of strip-shaped electrodes is formed on the gate dielectric, said strip-shaped electrodes running in a second direction which is substantially perpendicular to the first direction, characterized in that the channel-shaped strip-shaped semiconductor regions are not formed in the silicon slice until after the gate dielectric has been provided on the surface of the silicon slice, the ions of the dopants being implanted through the gate dielectric and the channel-shaped strip-shaped semiconductor regions are formed in the silicon slice before the strip-shaped electrodes are formed on the gate dielectric.

2. (original) A method as claimed in claim 1, characterized in that the silicon nitride layer is deposited on the silicon oxide layer by means of a LPCVD (Low Pressure Chemical Vapor Deposition) process.

3. (original) A method as claimed in claim 2, characterized in that the silicon nitride layer is deposited in a thickness of at least 50 nm.

4. (previously added) A method of manufacturing a charge-coupled image sensor comprising:

providing a gate dielectric on a surface of a silicon slice of by forming a layer of silicon oxide on the surface and depositing a silicon nitride layer on the layer of silicon oxide;

forming a plurality of elongate channels in the silicon slice by implanting dopant ions through the gate dielectric into the silicon slice, the channels being formed so as to adjoin the surface; and

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forming a system of elongate gate electrodes on the gate dielectric after the channels are formed, the elongate electrodes being formed transversely to the channels.

5. (previously added) A method as claimed in claim 4, characterized in that the silicon nitride layer is deposited on the silicon oxide layer by means of a LPCVD (Low Pressure Chemical Vapor Deposition) process.

6. (previously added) A method as claimed in claim 5, characterized in that the silicon nitride layer is deposited in a thickness of at least 50 nm.

7. (new) A method as claimed in claim 1, wherein:

the charge coupled image sensor includes buried channels; and

the channel-shaped semiconductor regions constitute the buried channels.

8. (new) A method as claimed in claim 4, wherein:

the charge coupled image sensor includes buried channels; and

the elongate channels constitute the buried channels.